

REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application.

Claims 1-20 are now present in this application. Claims 1 and 11 are independent.

Claims 7, 11 and 17 have been amended. Claim 11 is amended to correct a typographical error therein, i.e., by changing "and" to --an--, and claims 7 and 17 are amended to clarify their meaning, as explained below. No new matter is involved.

Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicant thanks the Examiner for acknowledging Applicant's claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claims 7 and 17 are objected to because the language, "a position corresponding to 70% of a distance from the end of the long [or short] side of

the mask frame toward the center thereof” is not clear. The Office Action indicates that a position cannot correspond to a percent of a distance. This rejection is respectfully traversed.

Applicant has amended claims 7 and 17 to remove the objectionable language and replaced it with more idiomatic English to thereby clarify its meaning. For example, as amended, claim 17 recites that DL3 denotes an interval between the mask frame and the shadow mask at a position which is located at 70% of a distance away from the end of the long side of the mask frame toward the center thereof. A similar amendment is made to claim 7.

Applicant respectfully submits that the meaning of the amended language is clear and definite and does not narrow the scope of the claims in any way.

Accordingly, reconsideration and withdrawal of this objection to claims 7 and 17 is respectfully requested.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 3 and 13 stand rejected under 35 U.S.C. § 112, 2nd Paragraph. This rejection is respectfully traversed.

The Examiner has set forth certain instances wherein the claim language “a radius of curvature of the long/short side of the mask frame” lacks antecedent basis because no curves have been mentioned.

Applicant respectfully disagrees with this statement. Applicant respectfully submits that all surfaces have a radius of curvature, including flat surfaces, whose radius of curvature is infinity. Because of this, Applicant respectfully submits that there is proper antecedent basis for the claim language in issue.

Accordingly, reconsideration and withdrawal of this rejection of claims 3 and 13 is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1-7 and 11-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,104,132 to Nose et al. ("Nose") in view of U.S. Patent 6,268,688 to Tani et al. ("Tani"). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

A prior art reference anticipates the subject matter of a claim when that reference discloses every feature of the claimed invention, either explicitly or inherently. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997) and Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed Cir. 1997). While, of course, it is possible that it is inherent in the operation of the prior art device that a particular element operates as theorized by the examiner, inherence may not be established by

probabilities or possibilities. In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) and In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the applicant to come forward to rebut such a case.

Because the rejection is based on 35 U.S.C. §103, what is in issue in such a rejection is "the invention as a whole," not just a few features of the claimed invention. Under 35 U.S.C. §103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art

to which said subject matter pertains." The determination under section 103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the Examiner must explain what the differences between the claimed invention and the prior art are and provide objective factual evidence to support a conclusion that it would be obvious to one of ordinary skill in the art to achieve the claimed invention, which includes those missing features.

In the second place, in rejecting claims under 35 U.S.C. §103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins &

Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

With respect to claim 1, Nose fails to disclose or suggest (1) a panel of which an outer surface is substantially flat; and (2) wherein long and short sides of the mask frame are slanted from ends towards centers thereof in order to maintain a predetermined interval with the long and short sides of the shadow mask.

With respect to claim 11, Nose fails to disclose or suggest wherein at least one of long and short side of the mask frame is concaved toward an inside of the mask frame.

In an attempt to remedy these admitted deficiencies, the Office Action turns to Tani, which discloses a substantially flat panel cathode ray tube that employs a shadow mask having "a pair of long side walls extending parallel to the long axis and a pair of short side walls extending parallel to the short axis (Abstract, lines 6-9)." The Office Action asserts that Tani discloses, in Fig. 4, and from col. 4, line 60 to col. 5, line 39, and in the Abstract, that the long and short sides of its mask frame are slanted from ends toward centers to maintain a predetermined interval with the long and short sides of the shadow mask.

Applicant respectfully disagrees for a number of reasons.

Firstly, Tani's mask frame side wall edges 40a are slanted or curved to be similar to the curvature of the main surface 31 of the shadow mask (col. 5, lines 18-24), but this is not what is recited in claim 1. Claim 1 recites a combination of features including wherein long and short sides of the mask frame are

from ends toward centers thereof in order to maintain a predetermined interval with the inwardly concaved long and short sides of the shadow mask. Tani does not disclose such features.

Secondly, although Tani discloses a substantially flat cathode ray tube, Nose does not, and the Office Action has not presented objective factual evidence to support a conclusion that one of ordinary skill in the art would be motivated to, turn to Tani to modify Nose when Nose does not disclose a substantially flat panel or any need for a flat panel or for any mechanism to strengthen its shadow mask.

Applicant respectfully submits that the only reason for making the proposed modification of Nose is based solely on improper hindsight reconstruction of Applicant's invention based solely on Applicant's disclosure.

With respect to claim 11, which recites a combination of features, including a mask frame for fixing and supporting the shadow mask, wherein at least one of long and short sides of the mask frame is concaved toward an inside of the mask frame, Applicant respectfully submits that the only curvature of Tani's shadow mask frame is of the edges 40a, and does not constitute the recited mask frame curvature toward an inside of the mask frame. Thus, even if the Office Action provided objective factual evidence of proper motivation to modify Nose on view of Tani, which has not been done, the

resulting modification of Nose in view of Tani would not result in, or render obvious, the invention recited in claim 11.

Because claims 2-7 depend from claim 1 and because claims 12-17 depend from claim 11, these claims are also not rendered obvious by Nose and Tani.

Further, with respect to claims 5 and 15, and 7 and 17, the Office Action predicates obviousness of the claimed invention by asserting that "it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable values involves only routine skill in the art," citing In re Aller, 105 USPQ 223, 235 (CCPA 1955). Actually, in that case, the Court of Customs and Patent Appeals set out the rule that the discovery of an optimum value of a variable in a known process is normally obvious.

However, the very same court subsequently determined that there are exceptions to this rule. One such exception is where the results of optimizing a variable, which was known to be result effective were exceptionally good. Another exception is where the parameter to be optimized was not recognized to be a result-effective variable. The rule and these exceptions are summarized in the later case of In re Antoine, 195 USPQ 6 (CCPA 1977).

Applicant respectfully submits that the present invention falls under one of the aforementioned exceptions to the rule, i.e., neither reference provides disclosure that the claimed intervals (DLc, Dli, DSc, Dsi) are result-effective

variables. Nor does the office Action provide objective factual evidence that these claimed intervals are result-effective variables or explain where such a disclosure is found in either applied reference.

Moreover, Applicant respectfully submits that neither of the applied references contains any disclosure or suggestion that the claimed intervals (DLc, Dli, DSc, Dsi) are result-effective variables.

Further, with respect to claims 6 and 16, Applicant respectfully submits that Tani does not contain any express or inherent (necessarily disclosed) disclosure of the claimed width of the slanted portion of the long side slanted from the end of the long side of the mask frame toward the center thereof is equal to or larger than 70% of a width from the end of the long side of the mask frame toward the center thereof, and a width of the slanted portion of the short side slanted from the end of the short side of the mask frame toward the center thereof is equal to or larger than 70% of a width from the end of the short side of the mask frame toward the center thereof.

In this regard, the Office Action relies on col. 5, lines 25-39 of Tani for such disclosure, which does not even address these features. Applicant respectfully requests that the Examiner explain which features in col. 5, lines 25-39 of Tani constitute such disclosure because even the "70% of the width from the end of the long side of the mask" language is not found in this portion of Tani.

Additionally, the alleged motivation to modify Nose in view of Tani in this regard is "to reduce the difference in temperature within the CRT" citing col. 5, lines 26-54. Applicant respectfully submits that the alleged reduction in temperature difference is ascribed to making the height of the central portion of the long side wall 41 of the mask frame 38 lower than the end portions thereof (col. 5, lines 39-56) and the Office Action fails to demonstrate the relevance of this feature to the claimed invention. Thus, the Office Action fails to make out a *prima facie* case of proper motivation to modify Nose in view of Tani.

Accordingly, this rejection of claims 1-7 and 11-17 is improper and should be withdrawn.

Reconsideration and withdrawal of this rejection of claims 1-7 and 11-17 are respectfully requested.

Claims 8, 9, 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nose in view of Tani and further in view of U.S. Patent 3,737,703 to Tsuneta et al. ("Tsuneta"). This rejection is respectfully traversed.

This rejection is improper at least because of the aforementioned deficiencies of Nose and Tani. Moreover, Tsuneta is not applied to remedy the aforementioned deficiencies of Nose and Tani. Accordingly, even if the Office Action provided objective factual evidence of proper motivation to modify the Nose-Tani reference combination in view of Tsuneta, which it does not, the resulting modification of

Nose and Tani in view of Tsuneta would neither meet nor render obvious, the claimed invention.

Additionally, the relied-upon angles disclosed by Tsuneta in col. 5 and shown in Figs. 8-12, which are actually angles between the vertical side wall 20 and the bottom flange 22b of Tsuneta's shadow mask frame have not been demonstrated to have anything to do with the claimed Lcor or Scor, which, as illustrated for example, in Fig. 18, certainly have nothing to do with the angle between a vertical side wall and a bottom flange of a shadow mask frame.

Thus, even if one of ordinary skill in the art were motivated to modify Nose and Tani in view of Tsuneta, the resulting modification would neither result in nor render obvious the invention recited in claims 8, 9, 18 and 19.

Reconsideration and withdrawal of this rejection of claims 8, 9, 18 and 19 are respectfully requested.

Claims 10 and 20 stand rejected under 35 USC §103(a) as unpatentable over Nose in view of Tani and further in view of U.S. patent 4,748,371 to Bauder. This rejection is respectfully traversed.

This rejection is improper at least because of the aforementioned deficiencies of Nose and Tani. Moreover, Bauder is not applied to remedy the aforementioned deficiencies of Nose and Tani. Accordingly, even if the Office Action provide objective factual evidence of proper motivation to modify the Nose-Tani reference

combination in view of Bauder, which it does not, the resulting modification of Nose and Tani in view of Bauder would neither meet nor render obvious, the claimed invention.

Bauder is relied upon to disclose that an interval between the shadow mask and the shadow mask frame is equal to or larger than 2.6mm in order to minimize temperature differentials. Applicant respectfully disagrees with this statement. In col. 4, lines 49-55, which is relied on by the Office Action, Bauder discusses a shadow mask border B, which is disclosed as "disposed between the perimeter of the [shadow mask] apertured array and a bend, line adjoining a mask skirt (col. 1, lines 28-30)." Applicant respectfully submits that a shadow mask B is not an interval between the shadow mask and the shadow mask frame, and that there is no absolutely no discussion in col. 4, lines 49-55 of Bauder of the claimed interval between the shadow mask and the shadow mask frame.

Accordingly, Applicant respectfully submits that Bauder is not relevant to the invention recited in claims 10 and 20 and even if Bauder were used to modify Nose and Tani, the resulting modification of Nose and Tani would neither meet nor render obvious the invention recited in claims 10 and 20.

Reconsideration and withdrawal of this rejection of claims 10 and 20 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

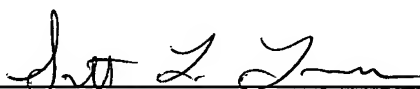
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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